

Frequently Asked Questions about Anthrax

What is anthrax?

Anthrax is a serious disease caused by anthrax bacteria. Anthrax spores are a form of the bacteria in a hard shell that can occur naturally or be processed as part of a fine, powder-like substance, or in larger clumps. Anthrax is in the news because of the recent cases of disease and deaths caused by the deliberate distribution of anthrax spores through the mail with the intention of harming people. Prior to these recent cases of bioterrorism in the United States, most cases in humans have come from contact with infected animals or contaminated animal products. According to the Centers for Disease Control and Prevention (CDC), the last death from anthrax in the United States before 2001 was in 1976. However, there was a nonfatal case of anthrax reported in 2000 in North Dakota.

Anthrax infection can occur in three forms: cutaneous (skin), inhalation or pulmonary (affecting the lungs), and gastrointestinal. Inhalation anthrax is the most dangerous form of anthrax and is usually fatal if not treated. However, if left untreated, all forms of anthrax can be fatal.

What is the difference between exposure to anthrax and disease caused by anthrax?

A person can be exposed to anthrax by coming into contact with anthrax bacteria. However, a person can be exposed without getting the disease. Actual anthrax disease occurs when there is some sign of illness, such as the skin lesion that occurs with cutaneous anthrax. A person who is exposed to anthrax spores but given appropriate antibiotics can avoid getting anthrax. Anthrax is not a contagious disease and cannot be passed from person to person.

What are the signs and symptoms of anthrax?

Symptoms of disease vary depending on how the disease was contracted, but usually occur within 7 days after exposure. The serious forms of human anthrax are cutaneous (skin) anthrax, inhalation anthrax, and intestinal anthrax.

- **Cutaneous (skin) anthrax:** Most anthrax infections occur when the bacterium enters a cut or abrasion on the skin. Skin infection begins as a raised itchy bump that resembles an insect bite. Within 1-2 days it develops into a painless ulcer with a characteristic black necrotic (dying) area in the center. Lymph glands in the adjacent area may swell. About 20 percent of untreated cases of cutaneous anthrax will result in death. Deaths are rare with appropriate antibiotic therapy.

- **Inhalation (pulmonary) anthrax** is the most lethal form of anthrax and results from inhaling 8,000-40,000 spores of the bacteria into the lungs. The incubation period of inhalation anthrax among humans is unclear, but it is reported to range from 1 to 7 days, possibly ranging up to 60 days. Initial symptoms may resemble those of a common cold, such as sore throat, mild fever, muscle aches, and malaise. After several days, the symptoms may progress to severe breathing problems and shock, with meningitis frequently developing. Inhalation anthrax is often fatal.
- **Intestinal anthrax:** The intestinal disease form of anthrax may follow the ingestion of anthrax bacteria and is characterized by an acute inflammation of the intestinal tract. Initial signs of nausea, loss of appetite, vomiting, and fever are followed by abdominal pain, vomiting of blood, and severe diarrhea. Intestinal anthrax results in death in 25% to 60% of cases.

What specific symptoms should I watch for?

Persons should watch for the following symptoms:

- Fever (temperature greater than 100 degrees F)
- Flu-like symptoms (cough, fatigue, muscle aches), nausea, vomiting, or diarrhea
- A sore, especially on your face, arms or hands.

The CDC has noted that the recent cases of inhalation anthrax have not included the symptom of nasal congestion or a runny nose. For more details about the recent anthrax cases, visit the CDC site at <http://www.bt.cdc.gov/>.

Can I get screened or tested to find out whether I have been exposed to anthrax?

No. Currently used tests for anthrax in an individual can only confirm an infection, not exposure without infection. The only way exposure can be determined is through a public health investigation. The tests that you hear or read about, such as nasal swabs and environmental tests, are not tests to determine whether an individual should be treated. These kinds of tests are used only to determine the extent of exposure in a given building or workplace and are not reliable in determining if an individual has been exposed to anthrax. When an investigation shows that exposure may have occurred, prophylactic (preventive) therapy with antibiotics is provided to those persons.

If you have anthrax-like symptoms, contact your health care provider immediately. Diagnostic tests, based on the clinical form of anthrax that is suspected (i.e., cutaneous, inhalational, or gastrointestinal), will be performed.

How is anthrax diagnosed?

Anthrax is diagnosed by isolating the anthrax bacteria from the blood, skin lesions, or respiratory secretions or by measuring specific antibodies in the blood of persons with suspected cases.

How is anthrax treated?

In persons exposed to anthrax, infection can be prevented with antibiotic treatment. Early antibiotic treatment of anthrax is essential—delay lessens chances for survival. The Food and Drug Administration (FDA) has approved and the CDC recommends the broad-spectrum antibiotics ciprofloxacin (Cipro) and doxycycline to prevent infection in a person exposed to anthrax spores (post-exposure prophylaxis). In addition to ciprofloxacin and doxycycline, penicillin is FDA-approved for the treatment of anthrax infections. In the case of inhalation anthrax or systemic involvement, the CDC recommends the use of multiple antibiotics.

Is recommended treatment different for children and pregnant women?

The CDC has stated that the antibiotic of choice for initial therapy in asymptomatic pregnant women who have been exposed to anthrax spores is ciprofloxacin. In the case of exposure to anthrax, children would also most likely receive ciprofloxacin initially. Doxycycline may also be used in children and pregnant women for treatment of anthrax, although it can have adverse effects on teeth and bone development. The potential risks of using these drugs must be weighed carefully against the risk for developing a life-threatening disease due to anthrax. Penicillin may be used in cases where the specific anthrax strain has been shown to be penicillin-sensitive.

The CDC has a new fact sheet for parents, "Children and Anthrax" at <http://www.bt.cdc.gov/DocumentsApp/Anthrax/11072001/parents.asp>.

Should I take antibiotics to protect myself in case I get exposed to anthrax?

No. The FDA stresses that antibiotics should only be used by those who really need them, including people who have actually been exposed to or infected by anthrax spores. Unnecessary antibiotic use exposes patients to the risks of a drug without any potential benefit and can lead to the development of drug-resistant bacteria.

Your health care provider will select antibiotic treatment in consultation with public health officials in the case of anthrax exposure.

Is there a vaccine to prevent anthrax?

While an anthrax vaccine that can prevent infection has been developed, its use is limited at this time, primarily only for members of the military who risk exposure through biological warfare. Vaccination against anthrax is not recommended and is not currently available for the general public to prevent disease.

Can I be exposed to anthrax via mail?

It is believed that only a small number of letters containing anthrax spores have been mailed in the United States during the current national security crisis. Unfortunately, because at least one of the letters with finely processed anthrax went through several mailrooms, several people inhaled the powder-like substance as it floated in the air and contracted the disease.

To prevent such exposures and subsequent infection, all persons should learn how to recognize a suspicious package or envelope and take appropriate steps to protect themselves and others. The U. S. Postal Service (USPS) has information on its web site about how to identify suspicious mail, including the following characteristics:

- It's unexpected or from someone you don't know.
- It's addressed to someone no longer at your address.
- It's handwritten and has no return address or bears one that you can't confirm is legitimate.
- It's lopsided or lumpy in appearance.
- It's sealed with excessive amounts of tape.
- It's marked with restrictive endorsements such as "Personal" or "Confidential."
- It has excessive postage.

What should I do if I get a suspicious letter or package?

According to the USPS, if you get a package or piece of mail that you're suspicious of, the first thing to do is stay calm. Don't handle, shake, bump, or sniff the suspicious item. Notify your local law enforcement authorities right away. Isolate the mail piece and keep others away from the area. If possible, put the mail piece in a zip-locked plastic bag and wash your hands thoroughly with soap and water. The simple act of paying attention to your incoming mail is the best way to keep the mail safe. For updated information on the safety and security of the mail, please visit the USPS web site at www.usps.com.

Should I take any special precautions when opening my mail?

Although the chance of getting anthrax through your mail is remote, a simple precaution you can take is to be sure to wash your hands thoroughly with soap and water after handling your mail. If you find anything suspicious in your mail, see the information above.

Can anthrax spores be killed on letters in the mail by microwave, UV light, or ironing?

While some of these methods may kill some spores, it is not known what procedures to use (e.g., length of time, temperature, etc.). Furthermore, because of insufficient data on the efficacy of these methods in inactivating anthrax spores, CDC does not recommend these techniques for reliable decontamination.

For more information . . .

Centers for Disease Control and Prevention

Public Health Emergency Preparedness and Response

www.bt.cdc.gov

Detailed fact sheets from CDC about anthrax:

The National Women's Health Information Center (NWHIC)

A Project of the Office on Women's Health in the U.S. Department of Health and Human Services

- <http://www.bt.cdc.gov/DocumentsApp/FAQAnthrax.asp>
- http://www.cdc.gov/ncidod/dbmd/diseaseinfo/anthrax_g.htm

Resources related to antibiotics used to prevent and treat anthrax:

- <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5043a5.htm> (about antibiotic use in pregnant women)
- <http://www.ftc.gov/bcp/online/pubs/alerts/bioalrt.htm> (consumer alert about buying antibiotics online)
- <http://www.fda.gov/bbs/topics/ANSWERS/2001/ANS01112.html>
- <http://www.ftc.gov/opa/2001/11/alert.htm>

Other sites:

<http://www.consumer.gov/>

<http://www.fda.gov/oc/opacom/hottopics/bioterrorism.html>

<http://www.fda.gov/cber/vaccine/anthrax.htm>

<http://www.hhs.gov/news/press/2001pres/20011010a.html>

<http://www.hhs.gov/hottopics/healing/biological.html>

(links to information)

<http://www.nlm.nih.gov/medlineplus/anthrax.html>

(links to information)

<http://www.cdc.gov/od/oc/media/transcripts/to11101.htm>

Transcript of MMWR Update on Anthrax Investigations with Dr. Julie Gerberding, acting deputy director of CDC's National Center for Infectious Diseases, November 1, 2001 (Mentions lack of runny nose seen in cases of inhalation anthrax) Various other transcripts are available as well.

<http://www.bt.cdc.gov/DocumentsApp/Anthrax/11072001/parents.asp>

New from the CDC: "Children and Anthrax: A Fact Sheet for Parents"

The information in this FAQ was adapted from fact sheets and other materials from the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), and the U.S. Postal Service (USPS).

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